REMARKS

Rejection under 35 U.S.C. §112, Second Paragraph

In the Office Action mailed November 21, 2002, claims 5, 7-8, and 10-12 stand rejected under 35 U.S.C. §112, second paragraph, as indefinite. Claims 10-12 are canceled. Regarding claims 5 and 7-8, the Office Action states that claims 5 and 7-8 are inconsistent with claim 1 because claim 1 recites that only the barrel is made of the metallic material and claims 5 and 7-8 recite that the entire cylinder is made from the metallic material. Independent claim 1 is amended to remove the term "only". Accordingly, claims 5 and 7-8 are now consistent with independent claim 1. In view of the above amendments and remarks, it is respectfully requested that the rejection of claims 5, 7-8, and 10-12, now be withdrawn.

Rejection Under 35 U.S.C. §102

Claims 1-2 stand rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 5,061,533 (Gomi).

Independent claim 1 has been amended to recite that the entire barrel is made completely of a metallic material.

Gomi discloses a roll having a base tube comprising layers 1, 2, 3 made of a carbon fiber composite material (See Fig. 3 and col. 6, line 13). Further layers 5-8 are applied to the base tube (col. 6, lines 9-18). Gomi teaches that the Linear Expansion Coefficient of the roll is determined by the fiber orientation angle of the carbon fibers in the layers 1, 2, 3 (see col. 5, lines 10-61). Accordingly, Gomi fails to disclose a barrel of a cylinder made completely of a metallic material as now recited in independent claim 1. In view of the above amendments and remarks, it is respectfully submitted that independent claim 1 is not anticipated by Gomi under 35 U.S.C. §102(b).

Since Gomi discloses a roll having multiple layers made of carbon fiber composite material, Gomi fails to teach or suggest a roll having a barrel made completely of a metallic material. Therefore, independent claim 1 is not obviated by Gomi under 35 U.S.C. §103.

Rejection Under 35 U.S.C. §103

Claims 1-4 stand rejected under 35 U.S.C. §103 as unpatentable over U.S. Patent No. 5,740,736 (Toyoda) in view of U.S. Patent No. 5,925,496 (Ghosh) and Applicant's Admitted Prior Art (AAPA).

Toyoda discloses a printing press having an impression cylinder 1 which seems to disclose a barrel and a journal. However, there is no disclosure in Toyoda regarding the materials which may be used to make the barrel of the impression cylinder.

Ghosh fails to teach or suggest what Toyoda lacks. Ghosh discloses a printing member which is wrapped around a printing core. In col. 7, lines 57-60, Ghosh discloses that the core on which the printing member is wrapped may be composed of one or more metals such as ferrous metals (iron or steel), nickel, brass, copper, or magnesium. Ghosh further states that steel cores are preferable (see col. 7, line 60). Ghosh fails to teach any specific percentages of each metal that the core may contain except that the core is preferably made of steel.

According to the attached excerpts from *Mark's Standard Handbook for Mechanical Engineers*, Eighth Edition, 1978 (Attachment 1) and *Maschinenelemente, Entwerfen, Berechnen, und Gestalten im Maschinenbau* [Machine elements, Designs, Calculations, and Forms], 1955 (Attachment 2), steel does not contain more than 29% nickel. Accordingly, Ghosh fails to teach or suggest use of the specific steel/nickel alloy disclosed in the present invention which includes a

linear coefficient of expansion of about $\alpha < 5 \times 10^{-6}K^{-1}$ in a temperature range of from about 20° to about 60°, as recited in independent claim 1.

Furthermore, Toyoda and Ghosh are both silent regarding specific requirements for the linear coefficient of expansion of the core material. Accordingly, it is respectfully submitted there is no teaching or suggestion by the combined disclosures of Toyoda and Ghosh for making a cylinder barrel from the metallic material disclosed by AAPA or any other metallic material having a linear coefficient of expansion of about $\alpha < 5 \times 10^{-6}K^{-1}$ in a temperature range of from about 20° to about 60°, as recited in independent claim 1.

In view of the above amendments and remarks, it is respectfully submitted that independent claim 1 is not obviated by Toyoda in view of Ghosh and AAPA.

Dependent claims 2-5 and 7-9, being dependent on independent claim 1, are allowable for at least the same reasons as independent claim 1.

It is believed that no fees or charges are required at this time in connection with the present application; however, if any fees or charges are required at this time, they may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,

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AMENDMENTS TO THE CLAIMS SHOWING CHANGES

In the Claims:

Please amend claim 1 as follows:

1. (Amended) A printing unit cylinder for a rotary printing machine, comprising a body having a barrel as a centerpiece and two journals, a respective one of the journals being on each end of the barrel; ~~only~~ the entire barrel being made completely of a metallic material having a linear coefficient of expansion of about $\alpha < 5 \times 10^{-6}K^{-1}$ in a temperature range of from about 20° to about 60°.